AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph on page 21, beginning at line 1, with the following:

______In Fig. 6A, a method for detecting a water-suspect area in a structure that uses exposure wavelengths for both water and water vapor, begins in step S1. In step S2, a water exposure wavelength for the radiation 18 is determined.[,] The water exposure wavelength is to be used to expose a predetermined area of a structure 16. The water exposure wavelength is determined to be a wavelength that is significantly absorbed by water and is not significantly absorbed by either water vapor or the material composing the structure 16. In step S3, at least one reference wavelength for water is determined that is not significantly absorbed by water, water vapor or the material composing the structure.

______In step S4, a water detection wavelength is determined. The water detection wavelength is determined to be sensitive to the water exposure wavelength if water is present in the exposed area of the structure 16, and is not sensitive if water is absent from the exposed area of the structure 16. The detection and exposure wavelengths for water can be the same wavelength, or the detection wavelength for water can be an emission wavelength at which emission occurs from water as a result of absorption at the water exposure wavelength.

______In step S5, an exposure wavelength for water vapor is determined, such wavelength being significantly by water [16] vapor but not significantly absorbed by either water or the material composing the structure 16 [or the material composing the structure]. In step S6, a reference wavelength(s) for water vapor is determined. The reference wavelength is one that is not significantly absorbed by water vapor or water, and that is also not significantly absorbed by the material composing the structure 16. Optionally, the reference wavelength can be one at which no emission from water occurs if the water detection wavelength is an emission wavelength of water that is excited by the water exposure wavelength. In step S7, a detection wavelength for water vapor is determined that is sensitive to the exposure wavelength for water vapor, and that is not significantly absorbed by either water or the material composing the structure 16.

______Importantly, in steps S2 and S5, the exposure wavelengths that are significantly absorbed by water and water vapor can be determined to be wavelengths that are related to one another (i.e., wavelengths related to the same molecular absorption mechanics such as a particular mode of molecular vibration), but that are shifted in wavelength by the transition of water between the

liquid and vapor phases. Such exposure wavelengths can be used as highly effective indicators of the presence of water in a structure. Exemplary exposure wavelengths significantly absorbed by water and water vapor that exhibit this wavelength shift upon phase transition between water and water vapor include about 0.97 micrometers and 0.935 micrometers, 1.2 micrometers and 1.13 micrometers, 1.45 micrometers and 1.38 micrometers, and 1.94 micrometers and 1.86 micrometers, where the exposure wavelength pairs represent the wavelengths of significant absorption for water and water vapor, respectively.

______The reference wavelengths for water and water vapor determined in steps S3 and S6 can be the same wavelength at about 1.06 micrometers [and] or 1.66 micrometers (neither of these wavelengths is significantly absorbed by water, water vapor or many types of structure construction materials), although the reference wavelengths for water and water vapor need not be the same wavelength. Alternatively, if the water vapor detection wavelength is an emission wavelength, the water vapor reference wavelength is determined to be one at which no significant emission occurs from water exposed to the radiation 18 in addition to such wavelength not being significantly absorbed by either water or the material composing the structure 16.

______In step S8 of Fig. 6A, the generator 12 is positioned to expose a predetermined area of the structure 16 to the electromagnetic radiation 18. If the generator 12 produces visible wavelengths, the exposed area of the structure 16 can be readily determined and the generator 12 positioned by a human user of the method with the stand 20, to expose a predetermined area of the structure. Optionally step S8 could also be performed with a view-finder mounted [to] on the generator 12 which indicates the area of exposure of the radiation 18 generated by the generator 12, and such area can be marked with chalk, ink or other removable substance for use in positioning the sensor unit 14. The generator 12 can be positioned to expose a border between a water-suspect area and a relatively dry predetermined area of the structure 16, where the structure may be draying after the occurrence of a water problem, for example. At a border between a water-suspect area and a relatively dry predetermined area of the structure, both water and water vapor are usually present in significant and detectable concentrations.

______In step S9, the sensor unit 14 is positioned to receive the electromagnetic radiation 22 that is based on the radiation 18, from the predetermined area of the structure 16 that is to be exposed. The sensor unit 124 can be positioned by a human user of the method using stand 35

and a view-finder mounted to the sensor unit 14, which indicates the field-of-view over which the sensor unit 14 receives the radiation 22 from the area of the structure 16 exposed by the radiation 18. Optionally, the sensor unit 14 can be positioned through the use of visible wavelengths included in the radiation 18 generated by the generator 12, which indicate the area of the structure 16 that is to be exposed. Alternatively, the sensor unit 14 can be positioned to receive the radiation 22 from the area of the structure 16 that is to be exposed with the radiation 18 using chalk or ink markings on the structure 16 made by using a view finder of the generator 12 that indicates the area of the structure that will be exposed by the radiation 18.

______In step S10 of Fig. [S13]<u>6B</u>, the generator 12 generates the electromagnetic radiation 18 that includes the determined exposure and reference wavelengths for both water and water vapor. In step S11, the generator 12 exposes the predetermined area of the structure 16 with the generated electromagnetic radiation 18. In step S12, the sensor unit 14 receives the radiation 22 from the exposed predetermined area of the structure 16 at the detection and reference wavelengths for both water and water vapor. In step S13, the sensor unit 14 senses the electromagnetic radiation 22 to determine radiation intensity levels for the detection and reference wavelengths for both water and water vapor. In step S14, the intensity levels of the water detection and reference wavelengths are compared.

______In step S15, a determination is made to establish whether the intensity levels of the water detection and reference wavelengths differ by a predetermined amount. If the determination in step S15 is affirmative, in step S16, the radiation intensities of the water vapor detection and reference wavelengths are compared. In step S17, a determination is made to establish whether the intensity levels for the detection and reference wavelengths for water vapor differ by a predetermined amount. If the determination of step S17 is affirmative, in step S18, a determination is made that water is present in the exposed area of the structure 16. If the determination[s] of steps S15 or S17 <u>is</u> [are] negative, in step S19, water is determined not to be present in the exposed area of the structure 16. After performance of step[s] S18 or S19, the method of Figs. 6A and 6B ends in step S20. Steps S14 – S20 can be performed by either the processor 28 of the sensor unit 14, the computer 36, or a human user of the method.